Advanced User's Guide

8.VIII.2012 ver. 1.02**beta**

Home Center 2
Fibaro System
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Chapter 5

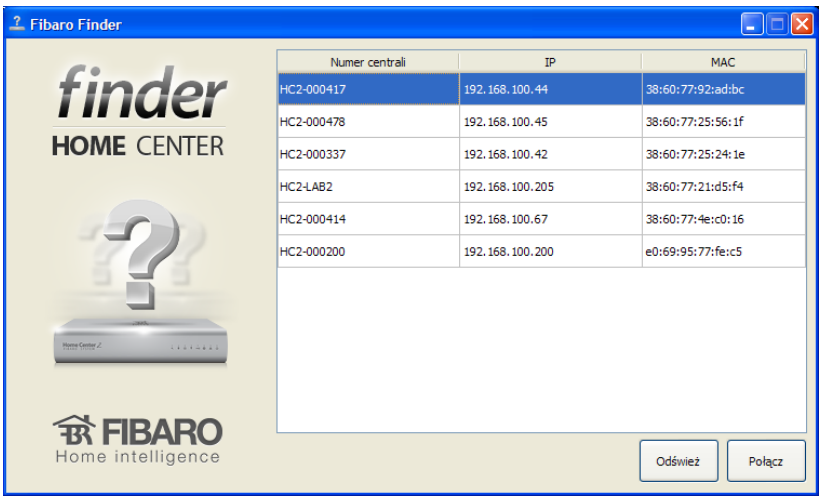
Home Center 2

The Home Center 2 is an electronic device which manages the Fibaro System. The HC2 communicates with the system components (sensors, Fibaro modules) located in user's house using wireless radio communication. The Home Center 2 contains certified Z-Wave communication module allowing for support of up to 230 devices, integrated within a Mesh network. The Home Center 2 uses a simple, user friendly interface for the Fibaro system. The device enables it's user to manage and control the house using any mobile or stationery device, with internet access, from anywhere in the world.

5.1 HC2 Finder

In a typical configuration, the Home Center 2 should be connected directly to a router. This way the DHCP server will set the HC2 a dedicated dynamic IP. For the greatest ease of use we have provided designated software, the Home Center Finder, so that the user can find his/her HC2 IP within the local network. Home

Center Finder scans the local network and displays the IP and MAC addresses of all available HC2 units.



5.2 Your House

Your house tab is the Home Center 2 interface main window. It displays all devices available within a given Fibaro System, such as modules, sensors and virtual devices. Elements are divided into groups, depending on the device type and location in certain room.

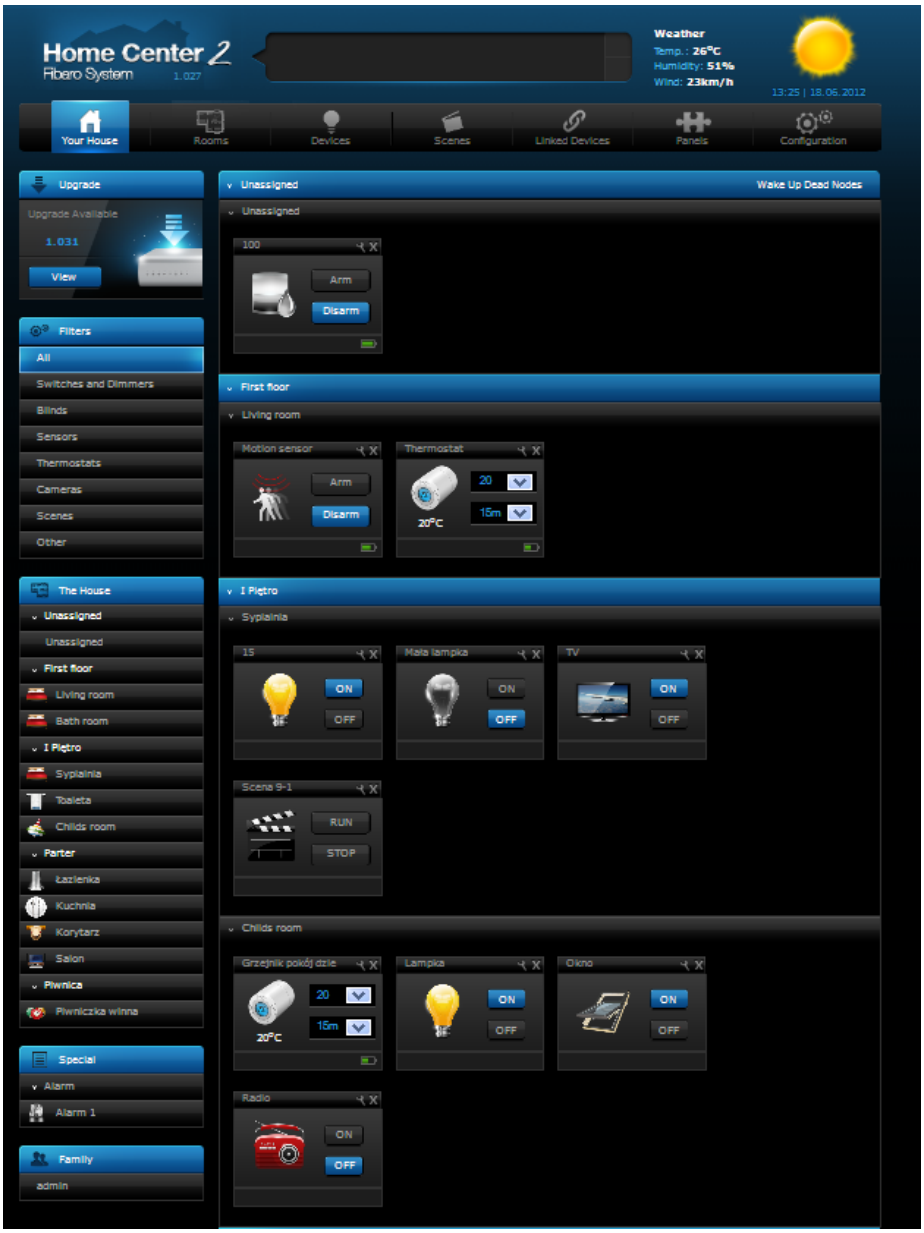


Figure 5.1: Your Home tab

5.3 Rooms

The *Rooms* tab is designed for adding rooms and sections, i.e. single rooms, room groups, floors, or any user-defined locations. To add a section, first enter it's name and click Add. The new section will be created and it's name will be displayed on left-hand list. After a new section has been created, new room within the section may be created. To do so, the room name must be entered, the desired section chosen, and the "Add" button clicked.

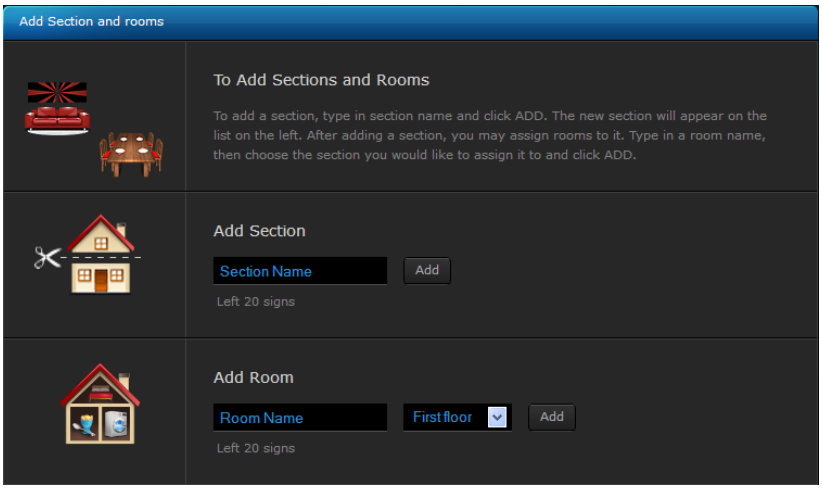

Add Section and rooms
To Add Sections and Rooms
To add a section, type in section name and click ADD. The new section will appear on the list on the left. After adding a section, you may assign rooms to it. Type in a room name, then choose the section you would like to assign it to and click ADD.
Add Section
Section Name
Add
Left 20 signs
Add Room
Room Name
First floor
Add
Left 20 signs

Figure 5.2: Adding Rooms / Sections Window

5.4 Devices

5.4.1 Z-Wave Devices Inclusion

The *Devices* tab enables management of devices included in the Fibaro System. Devices are Fibaro modules, Fibaro system compatible sensors, IP cameras and virtual devices. To add a Z-Wave device click Add. Once the system sets itself into learning mode, Perform the tasks described in the manuals (see chapters 3 and 4).

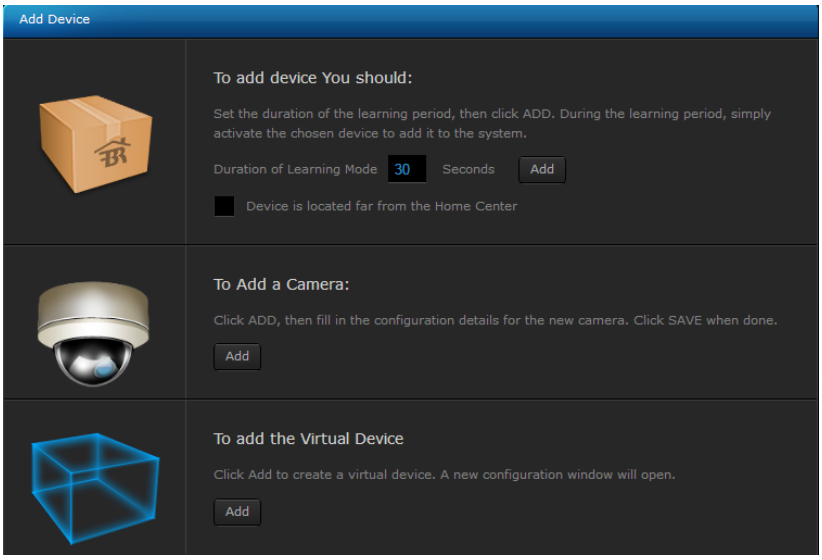

Add Device
To add device You should:
Set the duration of the learning period, then click ADD. During the learning period, simply activate the chosen device to add it to the system.
Duration of Learning Mode
30
Seconds
Add
Device is located far from the Home Center
To Add a Camera:
Click ADD, then fill in the configuration details for the new camera. Click SAVE when done.
Add
To add the Virtual Device
Click Add to create a virtual device. A new configuration window will open.
Add

Figure 5.3: Adding Devices Window

5.4.2 IP Camera Inclusion

To add new IP camera, click Add. A new window will pop up, in which all camera configuration options will be available. After completing the camera configuration, click Save on the top of the screen.

When including new IP camera, following options need to be configured:

- Camera name
- Room in which the camera will be presented in the interface
- Camera model - May be picked from the list
- Camera access - User's login and password
- IP Address of the camera

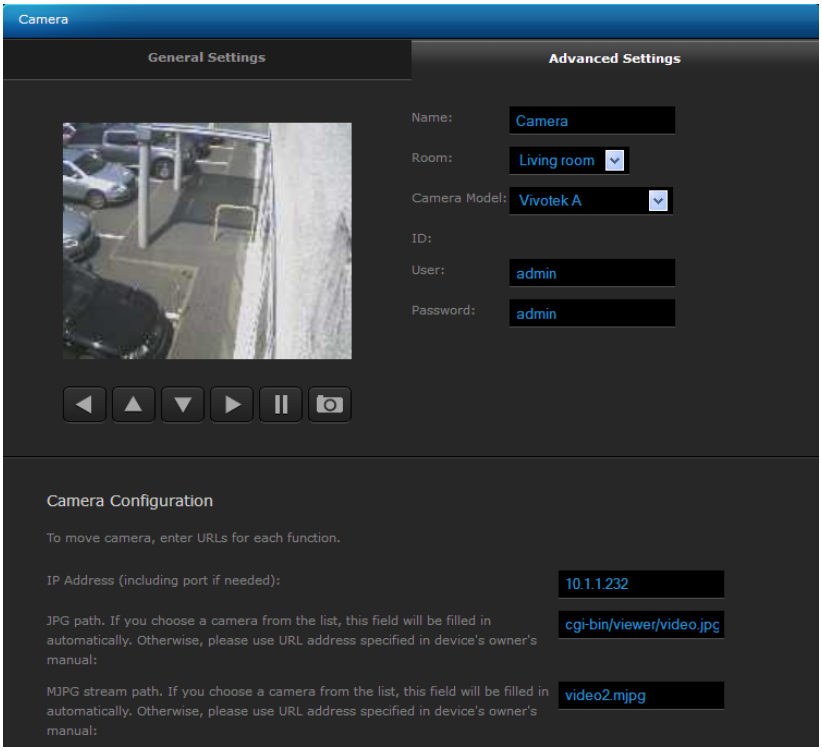

Camera
General Settings
Advanced Settings
Name:
Camera
Room:
Living room
Camera Model:
Vivotek A
ID:
User:
admin
Password:
admin
Camera Configuration
To move camera, enter URLs for each function.
IP Address (including port if needed):
10.1.1.232
JPG path. If you choose a camera from the list, this field will be filled in automatically. Otherwise, please use URL address specified in device's owner's manual:
cgi-bin/viewer/video.jpg
MJPG stream path. If you choose a camera from the list, this field will be filled in automatically. Otherwise, please use URL address specified in device's owner's manual:
video2.mjpg

Figure 5.4: Adding IP Camera window

- JPG path - JPG picture is used in remote access. All the necessary information should be available in the camera's user manual
- MJPG path - MJPG stream path is used in local access.
- If the camera can be rotated - paths for each movement direction (specified in camera's user manual)

5.4.3 Creating Virtual Devices

Virtual devices were designed to control complicated devices such as boilers, air conditioning units and home appliances (kitchen, audio and video appliances). These kinds of devices may be managed through multiple component communication protocol, and the use of RS232 and Ethernet ports. The Fibaro System makes it possible to create new device types and create designated communication protocols.

Managing virtual devices is performed with TCP/IP protocols - Target IP and TCP communication ports must be defined.

Next, the user defines a designated button, and defines the communication to be sent after the button is used. The system supports ***string*** communicates

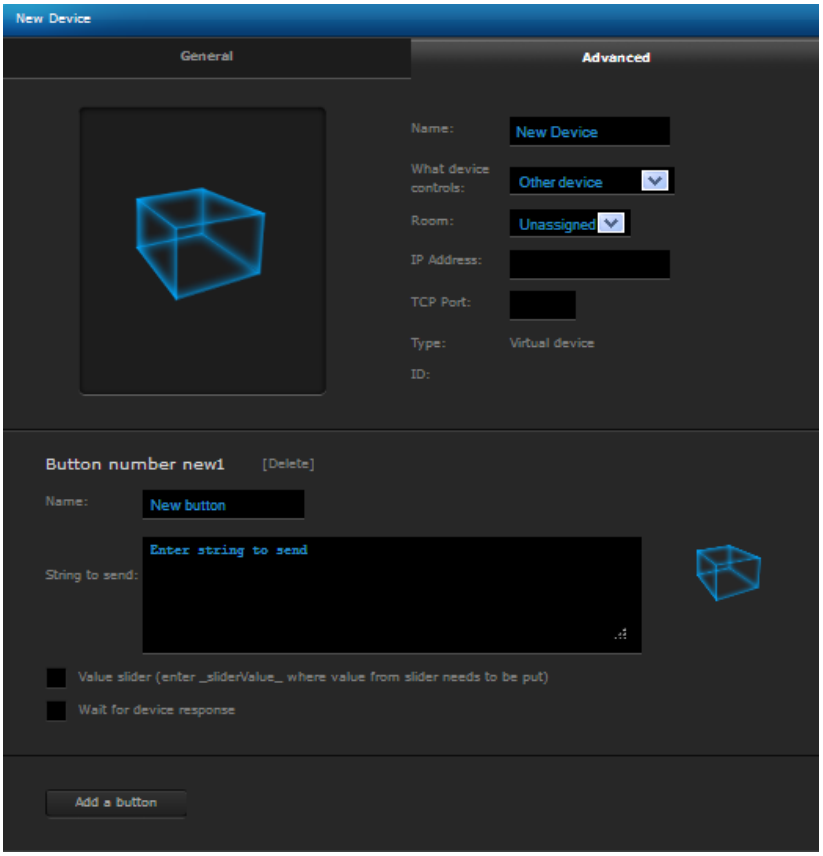


Figure 5.5: Adding Virtual Device Window

(text data type). For example, turn ON command line for Toshiba projector will be as follows:

```
GET /cgi-bin/webrc.cgi?P_ON=OK HTTP/1.10x0D0x0A0x0D0x0A
```

Another option is to create "value slider".

***NOTE** If the device confirm communication receipt please choose "wait for device's response" option*

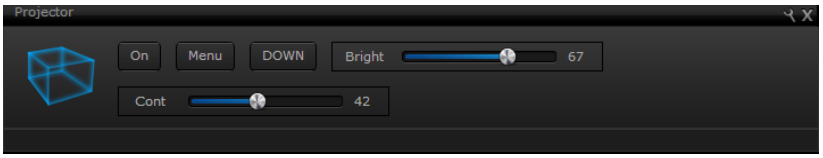


Figure 5.6: Virtual Device Example Icon

5.4.4 Deleting Devices

To delete device, simply click Delete. Device may be successfully deleted after the HC2 enters the learning mode (please refer to Chapters 3 and 4).

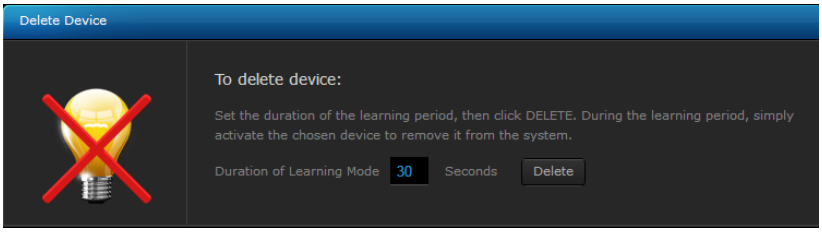

Delete Device
To delete device:
Set the duration of the learning period, then click DELETE. During the learning period, simply activate the chosen device to remove it from the system.
Duration of Learning Mode
30
Seconds
Delete

Figure 5.7: Deleting Device Window

5.5 Scenes

The*Scenes* tab lets the user program complicated functions between multiple devices included in the system. Scenes may be initiated by weather condition, a series of intuitive timers or various sensor/module state.

A Scene is a group of commands sent to user defined group of devices, e.g. "open the blinds 50%; and set the lights to 30% brightness". Scenes may be triggered by clicking the "Run scene" button. Scene may be also triggered by user defined actions, e.g. "run the scene if the motion sensor is tripped or the room temperature exceeds 27 degrees". Another option is to define the scene triggering timers, e.g. "run the scene each day at 8:30, and on Monday at 12:15".

To open a new scene window click Add. The new scene must me named and assigned to certain room for easier configuration. After general parameters have been set, The Scene "Advanced" tab should be opened. This is the tab in which the scene actions are programmed.

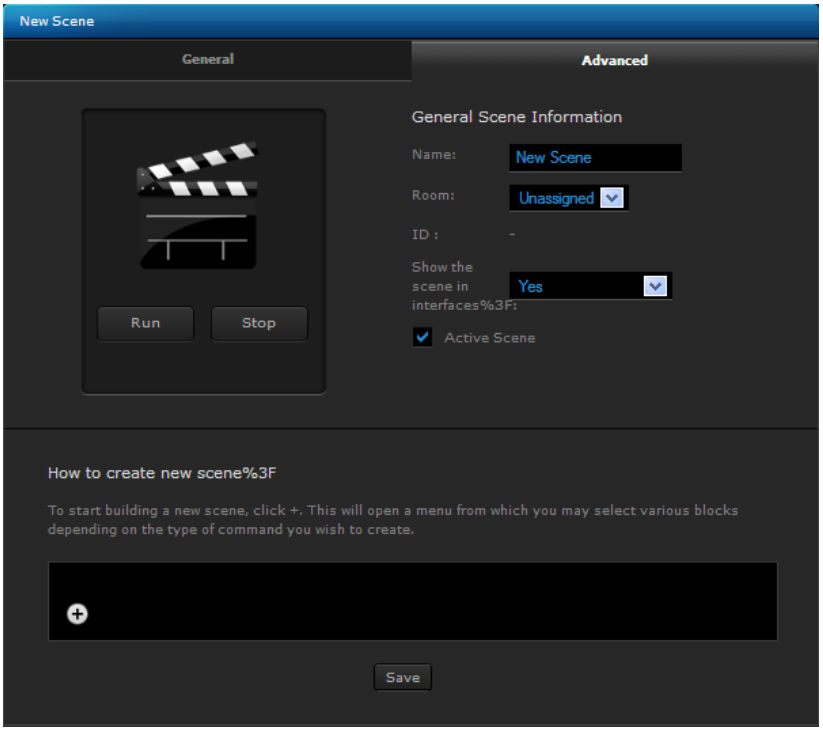
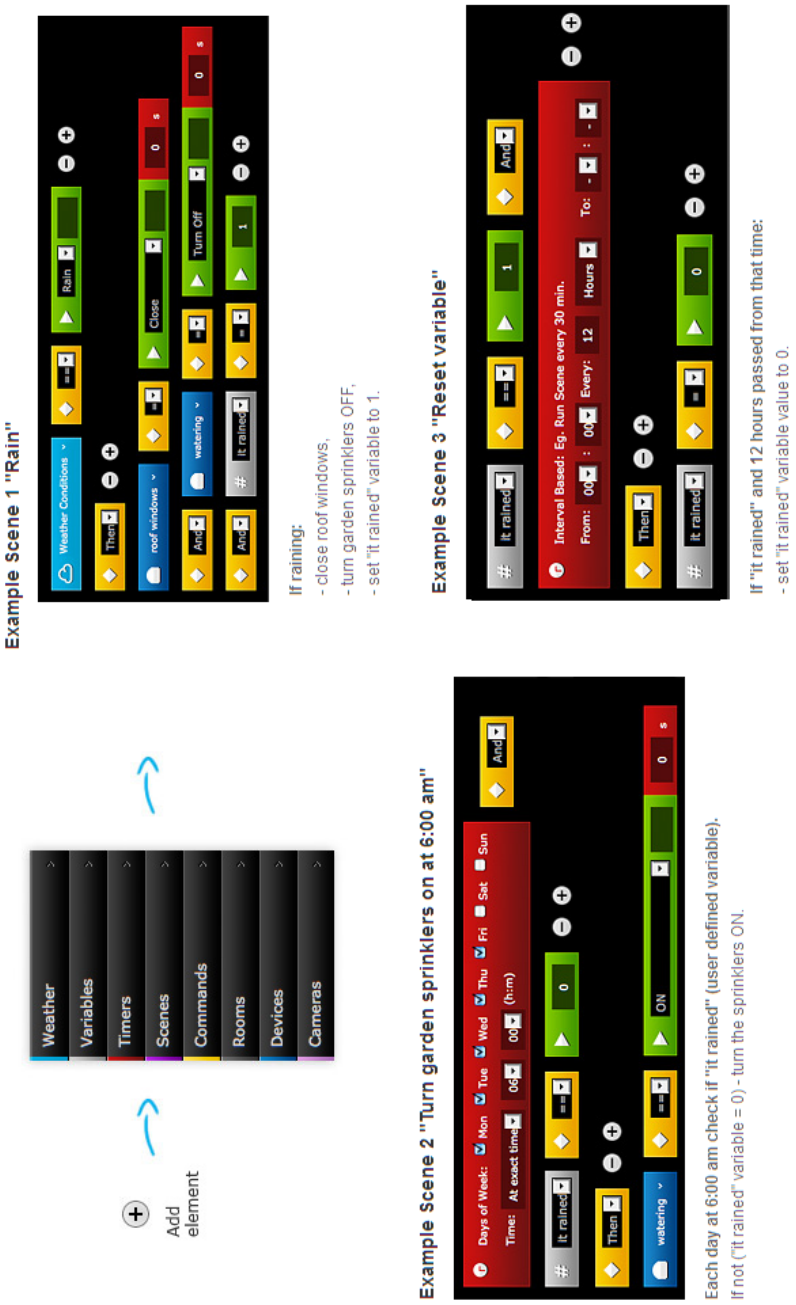


Figure 5.8: New Scene Creation Window

5.5.1 Example Scenes


Example Scene 1 "Rain"
If raining:
- close roof windows,
- turn garden sprinklers OFF,
- set "it rained" variable to 1.
Example Scene 3 "Reset variable"
If "it rained" and 12 hours passed from that time:
- set "it rained" variable value to 0.
Weather
Variables
Timers
Scenes
Commands
Rooms
Devices
Cameras
Add element
Example Scene 2 "Turn garden sprinklers on at 6:00 am"
Each day at 6:00 am check if "it rained" (user defined variable).
If not ("it rained" variable = 0) - turn the sprinklers ON.

5.6 Linked Devices

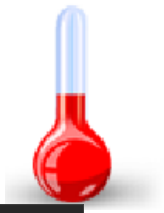
Linked Devices combine several devices into one device. Using this function will result in controlling the group of related devices as if they were one single device. The group will be presented in the HC2 interface as a single device.

The Home Center 2 offers four different Linked Devices panels:

- Heating
- Air Conditioning
- Humidity
- Video gate

5.6.1 Linked Devices - Heating

Heating linked devices was designed to enable link between Relay Switch module and temperature sensor. This linked may be used in control of boilers, floor heating, jacuzzis, swimming pools etc. After creating the linked devices, managing and scheduling is done by the use of Heating Panel.



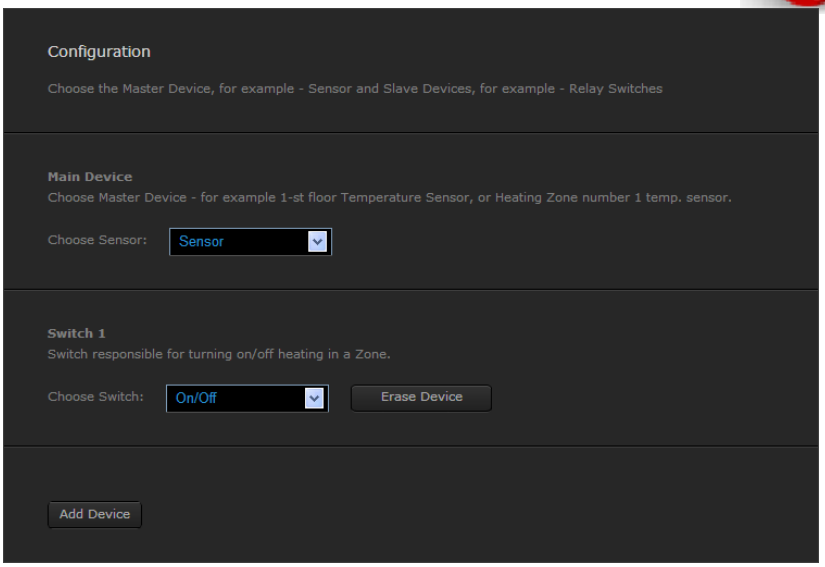

Configuration
Choose the Master Device, for example - Sensor and Slave Devices, for example - Relay Switches
Main Device
Choose Master Device - for example 1-st floor Temperature Sensor, or Heating Zone number 1 temp. sensor.
Choose Sensor:
Sensor
Switch 1
Switch responsible for turning on/off heating in a Zone.
Choose Switch:
On/Off
Erase Device
Add Device

Figure 5.9: Linked Devices Heating Window

5.6.2 Linked Devices - Air Conditioning

Air conditioning linked devices are based on the same principle as Heating Linked Devices. It is possible to add multiple switches turning several air conditioning devices ON / OFF, so that air conditioning in multiple rooms or sections may be operated as a single device. After air conditioning liked devices has been created, managing and scheduling is done by the use of the Air Conditioning panel.

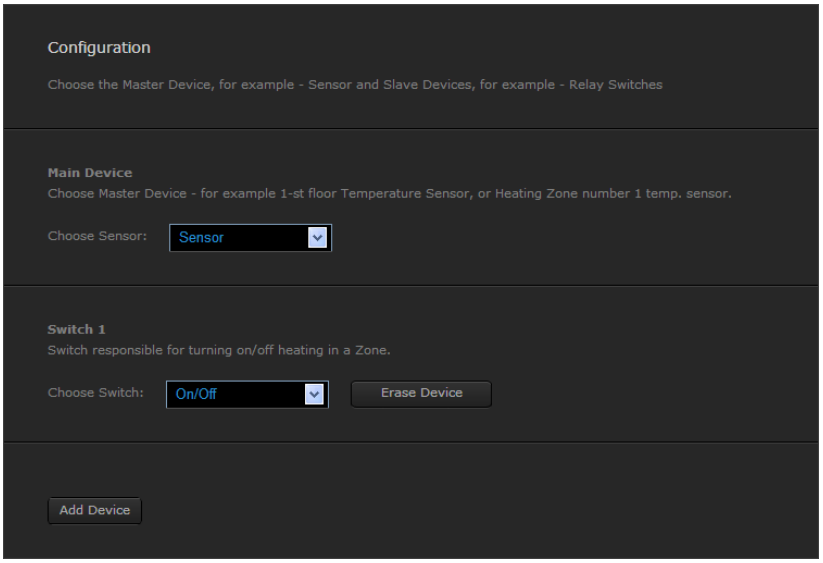

Configuration
Choose the Master Device, for example - Sensor and Slave Devices, for example - Relay Switches
Main Device
Choose Master Device - for example 1-st floor Temperature Sensor, or Heating Zone number 1 temp. sensor.
Choose Sensor:
Sensor
Switch 1
Switch responsible for turning on/off heating in a Zone.
Choose Switch:
On/Off
Erase Device
Add Device

Figure 5.10: Linked Devices Air Conditioning Window

5.6.3 Linked Devices - Humidity

Humidity linked devices uses the principle described in 5.6.1/2. After Humidity linked devices have been created, managing and scheduling of the new devices is done through the Humidity Panel.

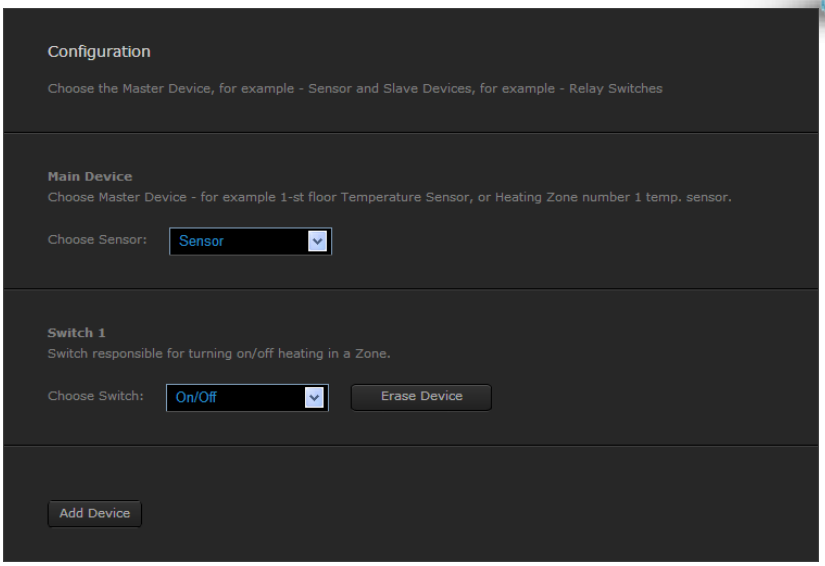

Configuration
Choose the Master Device, for example - Sensor and Slave Devices, for example - Relay Switches
Main Device
Choose Master Device - for example 1-st floor Temperature Sensor, or Heating Zone number 1 temp. sensor.
Choose Sensor:
Sensor
Switch 1
Switch responsible for turning on/off heating in a Zone.
Choose Switch:
On/Off
Erase Device
Add Device

Figure 5.11: Linked Devices humidity window

5.6.4 Video Gate

The Video gate is a link between three devices - an IP camera, the module responsible for opening the gate and the module responsible for triggering the doorbell. After the link has been created, the video gate may be controlled via an iPhone. To create the video gate, three devices must be added to the link: an IP camera overlooking the gate, a Relay Switch used to open the gate and a Relay Switch connected to the doorbell.

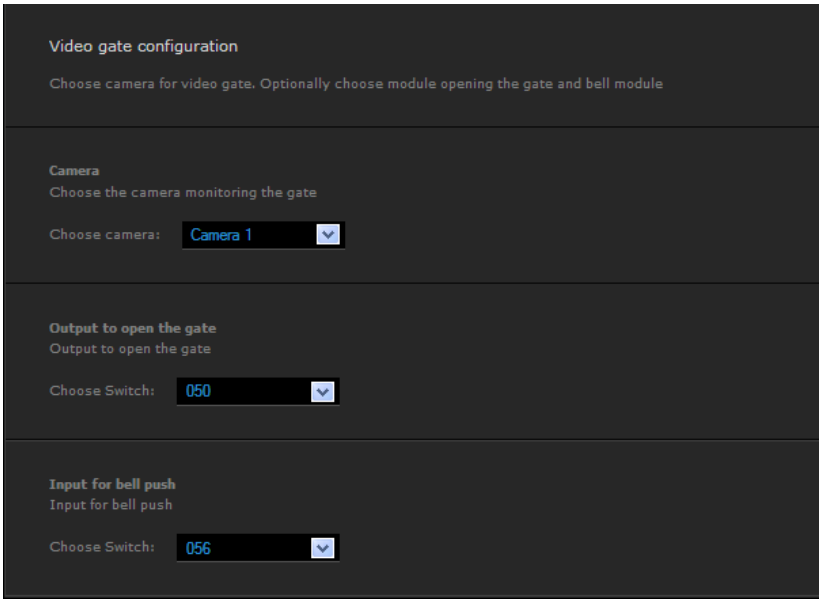


Figure 5.12: Linked Devices Video-gate Window

5.7 Panels

Panels simplify managing groups of related devices serving the same functionality, such as heating, air conditioning, or watering the garden. Using Panels, you can easily program the devices' schedule for the entire week.

5.7.1 SMS Panel

SMS Home Management is available in selected countries and allows you to stay in control of your home even when you don't have a viable internet connection. SMS Panel lets you define SMS communications sent by the system, define the list of telephone numbers allowed to manage the house and top-up the return messages account, used for the confirmation messages sent from sensors etc.

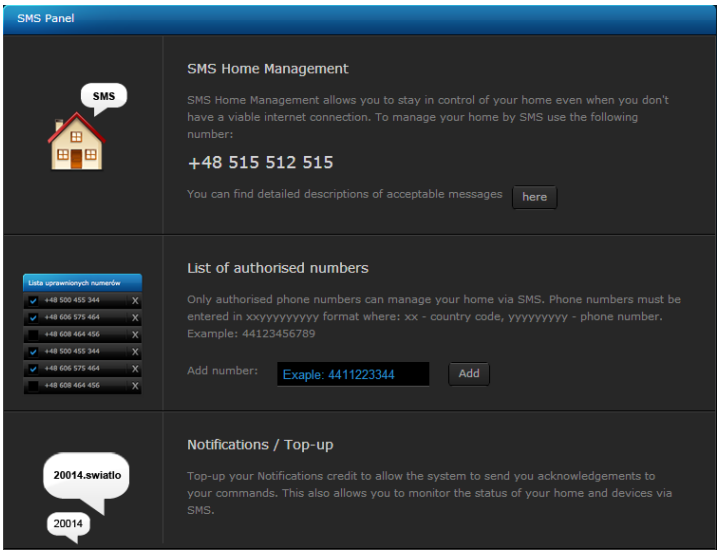

SMS Panel
SMS
SMS Home Management
SMS Home Management allows you to stay in control of your home even when you don't have a viable internet connection. To manage your home by SMS use the following number:
+48 515 512 515
You can find detailed descriptions of acceptable messages here
Lista uprawnionych numerów
+48 500 455 344
+48 606 575 464
+48 608 464 456
+48 500 455 344
+48 606 575 464
+48 608 464 456
List of authorised numbers
Only authorised phone numbers can manage your home via SMS. Phone numbers must be entered in xxyyyyyyyyy format where: xx - country code, yyyyyyyyy - phone number. Example: 44123456789
Add number:
Exaple: 4411223344
Add
Notifications / Top-up
Top-up your Notifications credit to allow the system to send you acknowledgements to your commands. This also allows you to monitor the status of your home and devices via SMS.
20014.swiatlo
20014

Figure 5.13: SMS Panel window

Example messages:

- `HC2-000417.lights.livingroom.on` -turns on all the lights in livingroom.
- `HC2-000417.lights.livingroom.off` - turns off all the lights in livingroom.
- `HC2-000417.lights.house.status` - sends the message informing of the status of all devices named "light" in the house. If, for example in the living room any light is on, an excerpt from the return message will appear as follows: `livingroom: on`. If all of the lights in the room are off, excerpt

from a return message will appear as follows: `livingroom: off`. To use the functionality, return messages pool must be bought.

5.7.2 Alarm Panel

The Alarm Panel is designed to manage the alarm control unit, integrated into the Fibaro System. The alarm central unit is integrated with the use of two Relay Switch 2x1,5kW modules.

In the Alarm Panel, the following devices need to be present:

- *Controlling Module* - arming / disarming alarm
- *Status Module* - informing about zone status (armed / disarmed)
- *Alarming Module* - indicating armed zone breach

The defined alarm will be presented in the Your House menu.

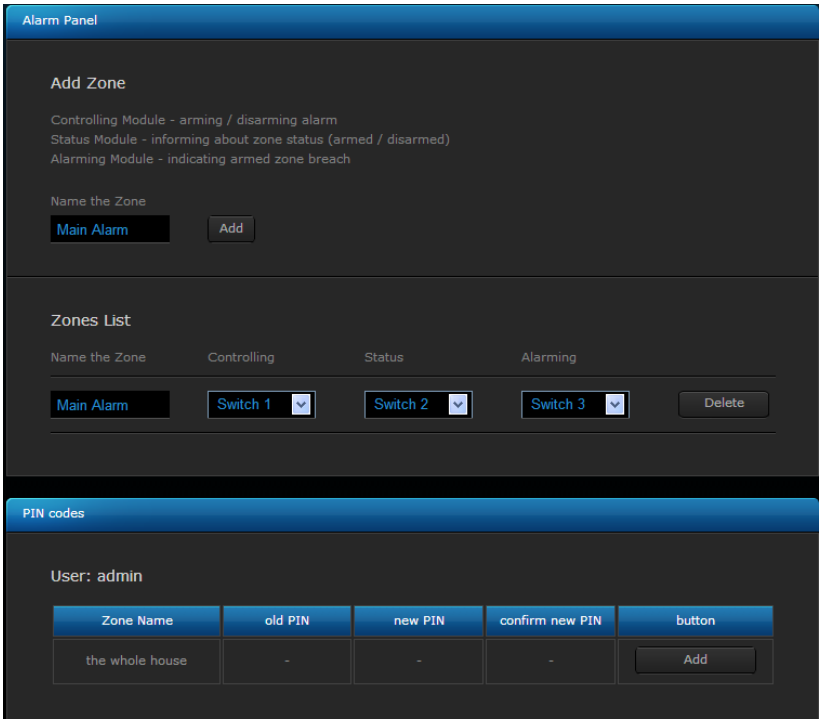


Figure 5.14: Alarm Panel

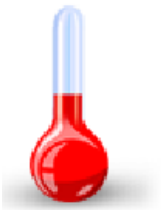
Alarm Integration

For integrating the alarm system into Fibaro System, two Relay Switch 2x1,5kw modules may be used.

- Connect Arming/Disarming input of the alarm control unit to **O1** and **O2** of the first Relay Switch 2x1,5kW
- Connect Status, i.e. Armed / Disarmed output of the alarm control unit to **S1** and **S2** inputs of the first Relay Switch 2x1,5kW
- connect alarming input of the alarm control unit (Breach / No Breach) to outputs *O1* and **O2** of the second Relay Switch 2x1,5kW

5.7.3 Heating Panel

The Heating Panel allows you to schedule heating programs at predetermined times. After the heating zones have been created and rooms are added to it, all devices responsible for maintaining the desired temperature will work in accordance with schedule.



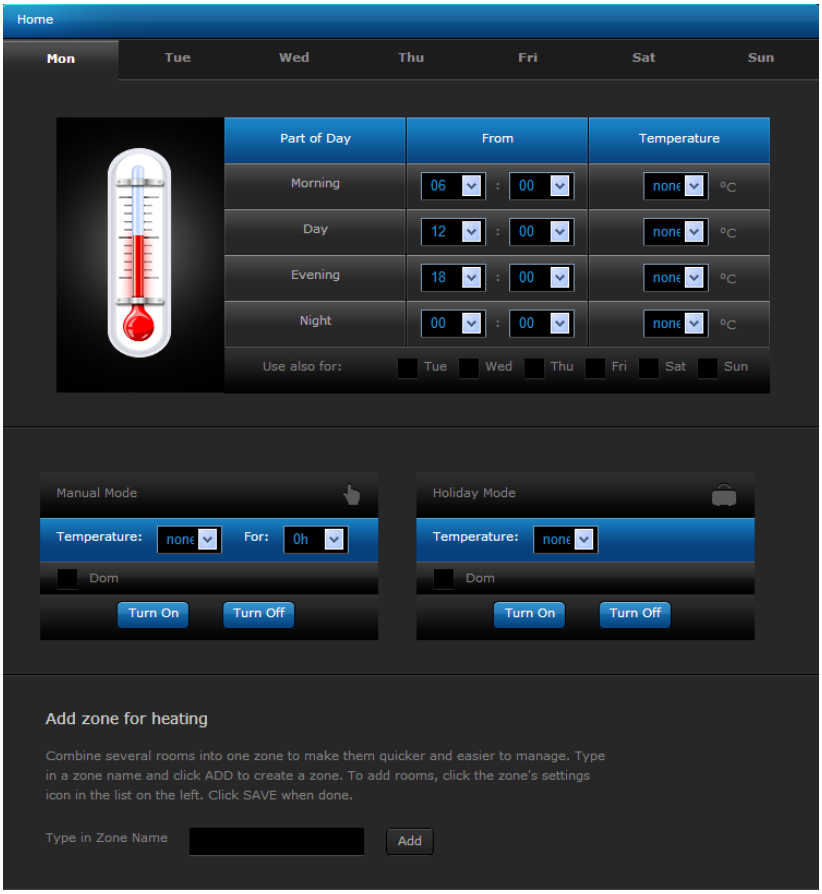


Figure 5.15: Heating panel window

5.7.4 Heating Panel

The Cooling Panel allows you to schedule cooling programs at predetermined times. After the cooling zones have been created and rooms are added to it, all devices responsible for maintaining the desired temperature will work in accordance with schedule.

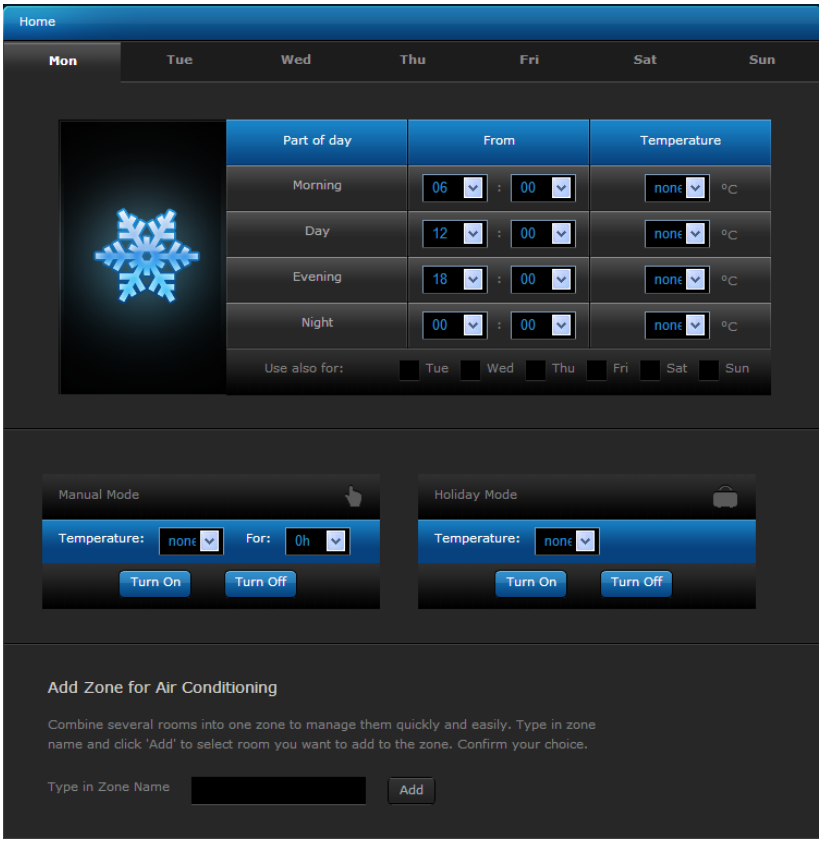


Figure 5.16: Air Conditioning panel window

5.7.5 Humidity Panel

The Humidity Panel allows you to schedule cooling programs at predetermined times. After the cooling zones have been created and rooms are added to it, all devices responsible for maintaining the desired temperature will work in accordance with schedule.

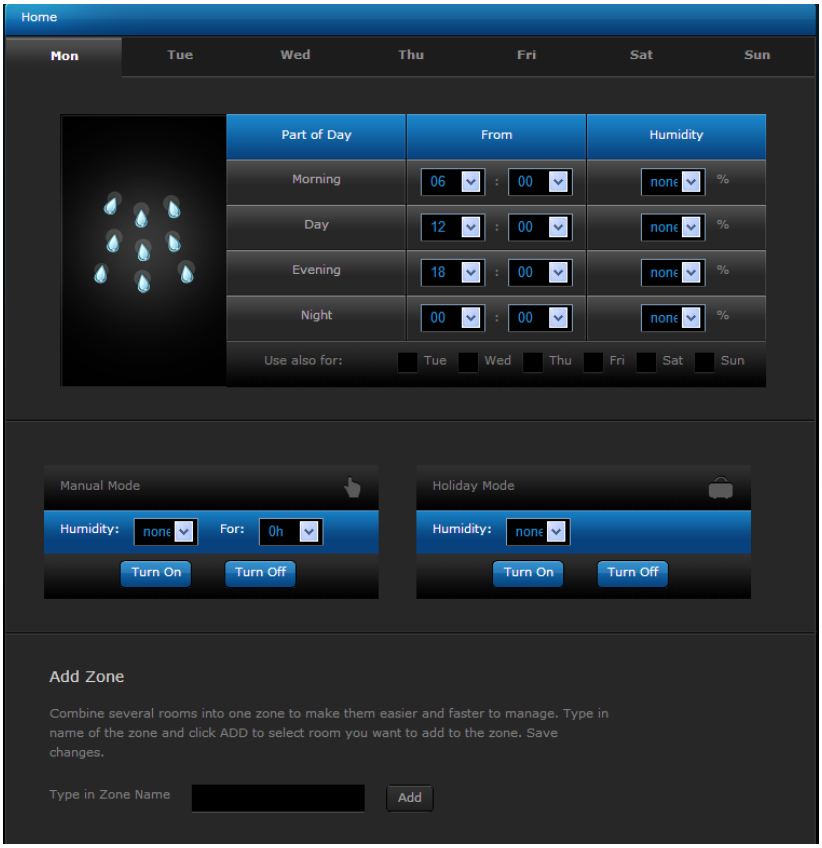


Figure 5.17: Humidity panel window

5.7.6 History Panel

The History Panel is a register of all of the activities taking place in a given Fibaro System. The panel lets the user monitor changes in status of all devices and filter them depending on the time they occured.

5.7.7 Access Control

The Users Panel is configured to manage the accounts of the users of a certain HC2 unit. It allows you to grant/block access to the devices, e.g. cameras; scenes and system settings. From the Users Panel it is also possible to grant/block access using the hotel mode for a given mobile application, or set a perion for reporting GPS locations from a certain iPhone device. Also, the Users Panel gives an option to define mobile devices which will receive Push Notifications.

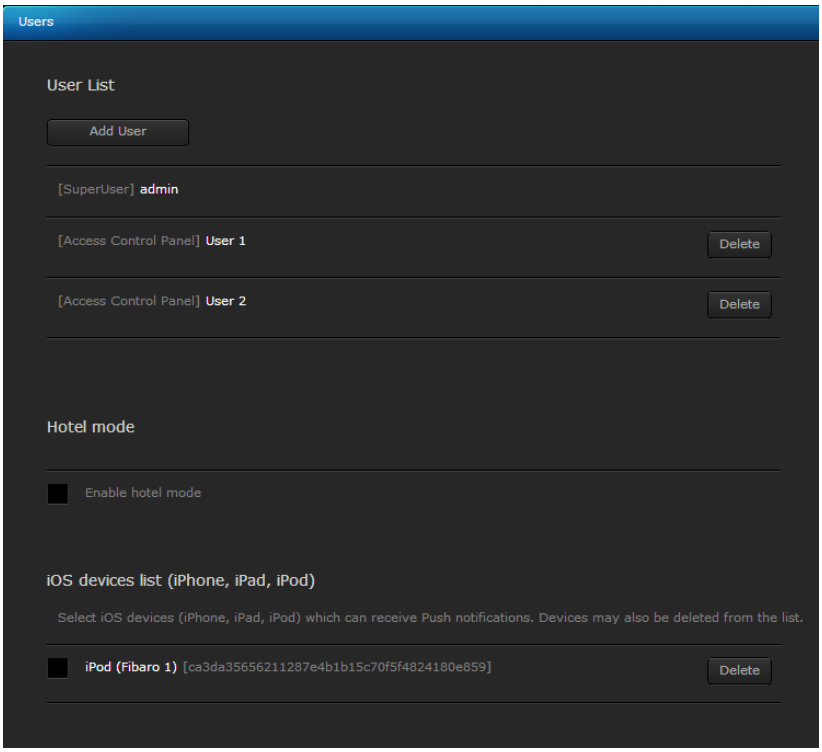


Figure 5.18: Access Control Panel

After clicking the user's name, the Users Panel shows the window shown in fig 5.19.

- Login
- Password (at least 4 characters. The system will ask for password confirmation)
- E-mail address (all notifications will be sent to this e-mail)
- If the user is receive the notification massages

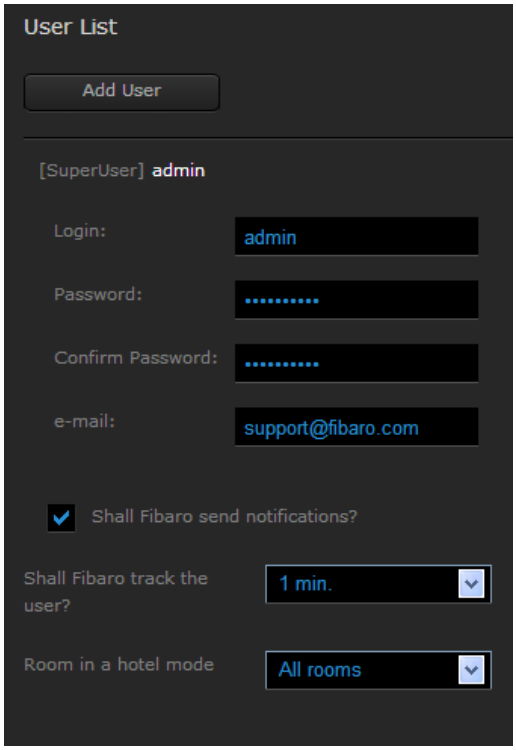


Figure 5.19: User configuration window

- If the user is to be tracked - how frequently GPS position from the user's iPhone will be collected. The shorter collection time, the more frequent readouts, resulting in more accurate positioning.
- Hotel mode - which rooms should be included in hotel mode for the user

Hotel Mode

Hotel mode is designed for defining a single room, that a given user will be able to manage through the iPhone interface. For example, if there is *USER 1* in the system, and the room *ROOM 1* assigned to the user, the person will be able to manage this single room only through his iPhone application.

Users Rights Management

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Users Panel gives the possibility for advanced control over users rights. It is possible to grant or block an access to:

- Devices - rights to operate certain devices
- Cameras - rights to check the image from certain IP cameras

- Scenes - rights to use certain scenes
- System - rights to manage certain system sections

List of iOS devices

This enables you to determine which of the users using iOs applications are to receive Push notifications. If the user is allowed to remotely access to the system, his iPhone must be marked on the list.

5.7.8 Notifications Panel

Notifications panel gives the ability to create messages to be used for informing the user of certain events taking place in the house.

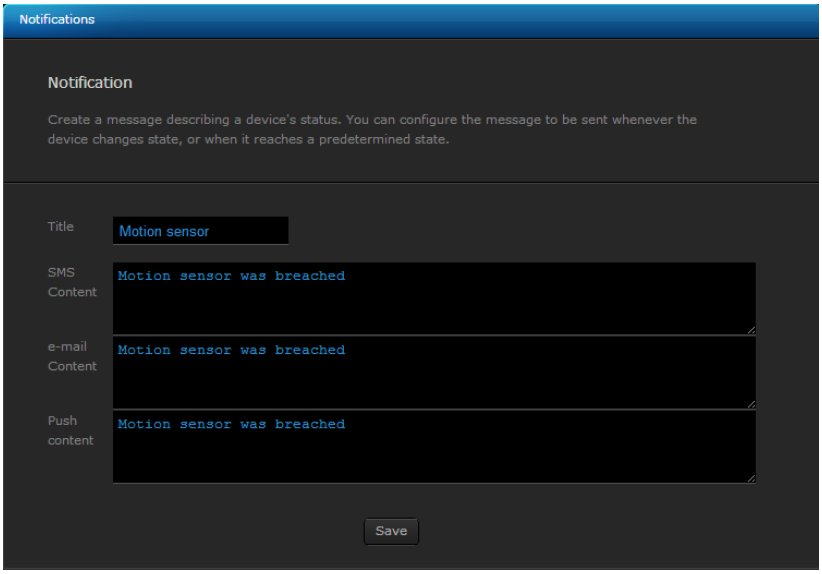
Notifications
Notification
Create a message describing a device's status. You can configure the message to be sent whenever the device changes state, or when it reaches a predetermined state.
Title
Motion sensor
SMS Content
Motion sensor was breached
e-mail Content
Motion sensor was breached
Push content
Motion sensor was breached
Save

Figure 5.20: Notification Panel

5.7.9 Localization Panel

Localization Panel uses user defined GPS points to activate GPS scenes. There are two ways of defining GPS points - choosing on a map, or entering certain GPS coordinates. Each user may enter indefinite number of GPS points.

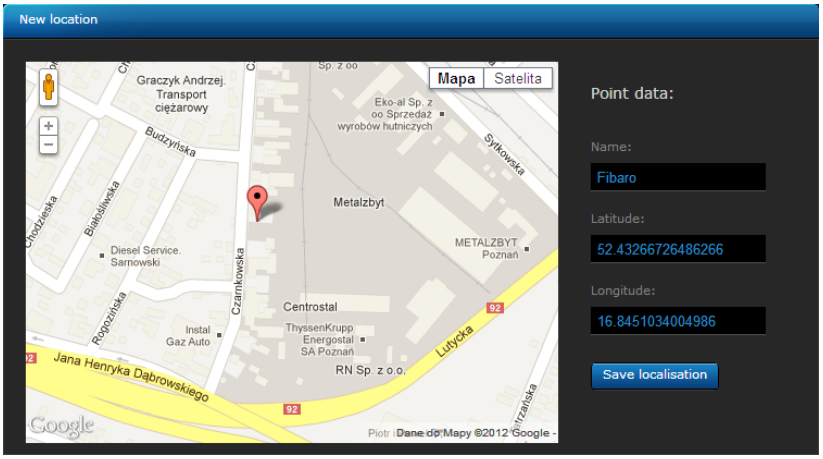

Figure 5.21: Localization Panel

Usage example: *USER 1* defines two *GPS* points *HOME* and *WORK*. Now it is possible to create scene turning OFF all the lights in the house once the user leaves the *HOME* location, and arms the alarm at home once the user enters *WORK* location.

5.8 Configuration

The Home Center 2 configuration options are divided into the following categories:

- General
- LAN settings
- Location
- Backup

5.8.1 General

Basic information about the Home Center 2, including:

- Serial no.
- MAC address
- Current software version
- Z-Wave chip software version
- Time and date last software update was performed
- Time and date last system backup file was created
- Server status

General information window also allows for performing following actions:

- Restart - Home Center 2 soft restart, i.e. system shut down and started again
- Z-Wave network reset - All of the system devices will be removed from HC2 Z-Wave chip memory, i.e. all of the device will have to be re-added to the system
- Default settings - Home Center 2 memory is reset to factory state, i.e. all of the devices are deleted together with their settings and dependencies (scenes). HC2 software is downgraded to it's oldest available version. After resetting to defaults, the HC2 software needs to be upgraded to latest available version.

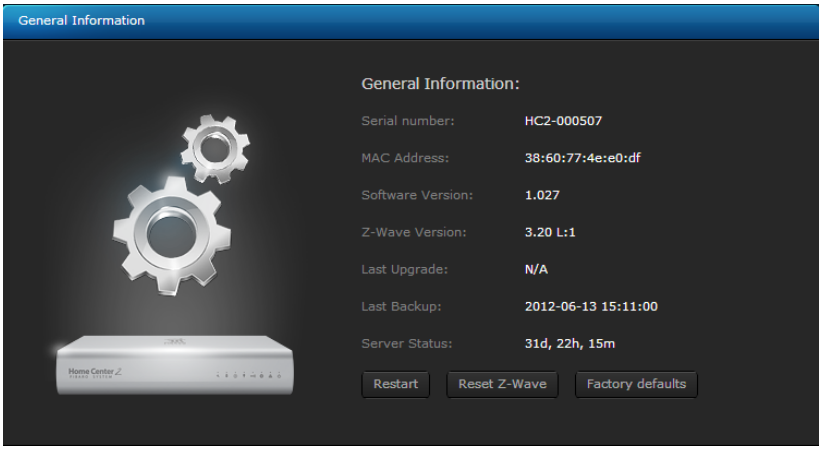

Figure 5.22: Configuration Panel - General

5.8.2 LAN Settings

There are two basic options available: DHCP or Static IP.
Following parameters may be defined:

- Home Center 2 IP address
- Subnet mask
- Default gateway IP, used by HC2 to connect the web
- DNS server address
- Remote access enabling

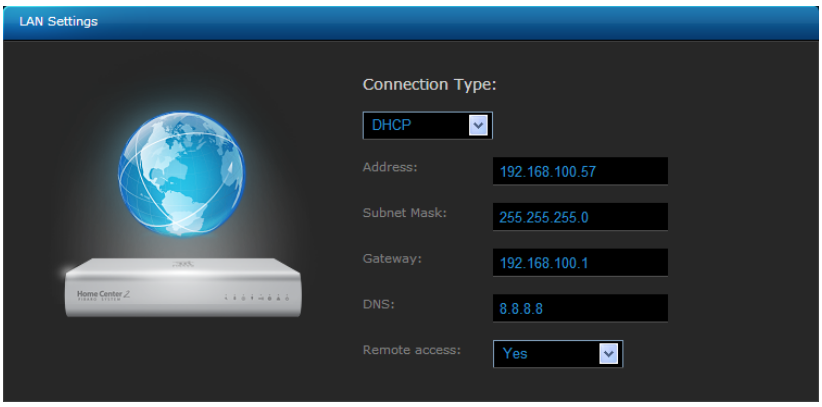

Figure 5.23: Configuration Panel - LAN settings

Important information on LAN settings

By default, the HC2 expects to be connected to a DHCP server. In this mode, HC2 IP address may be obtained with the use of the HC2 Finder (see *HC2 Finder*). Another option is to set Static IP. Static IP may be set from the LAN settings tab, or manually, by holding the Recovery button (back side of the HC2 casing) after the device has been connected to power supply. In this case, the HC2 will have following settings:

- IP Address: 192.168.81.1
- Subnet Mask: 255.255.255.0
- Gateway address: 192.168.81.1

When static IP has been set, it is possible to connect HC2 directly to Ethernet port of a PC, however PC network settings must be set to match those of HC2:

- PC/MAC IP: 192.168.81.5
- Subnet mask:: 255.255.255.0
- Gateway address: 192.168.81.1

NOTICE *After setting a static IP for the HC2 by pressing and holding the Recovery button, please enter LAN settings to change connection type to DHCP, when the HC2 is connected to the PC.*

5.8.3 Location

Location settings include time zone location, within which HC2 is installed. Additionally, it is possible to enter the longitude and latitude used for monitoring weather conditions (also used in scenes).

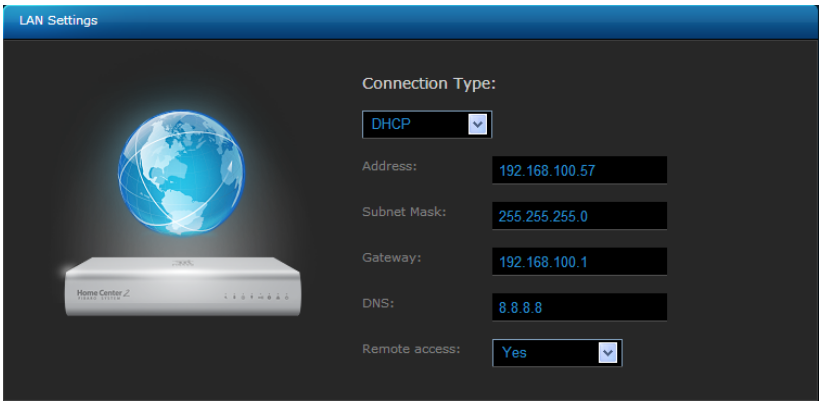

Figure 5.24: Configuration Panel - Location info

5.8.4 Backup

In this section the list of created backup files is displayed. Backup file is a copy of a file containing the information's about all devices added to the system and all of their settings, users individual settings and the HC2 operating system. Retrieving data from backup file means going back to all of the systems settings that had been saved.

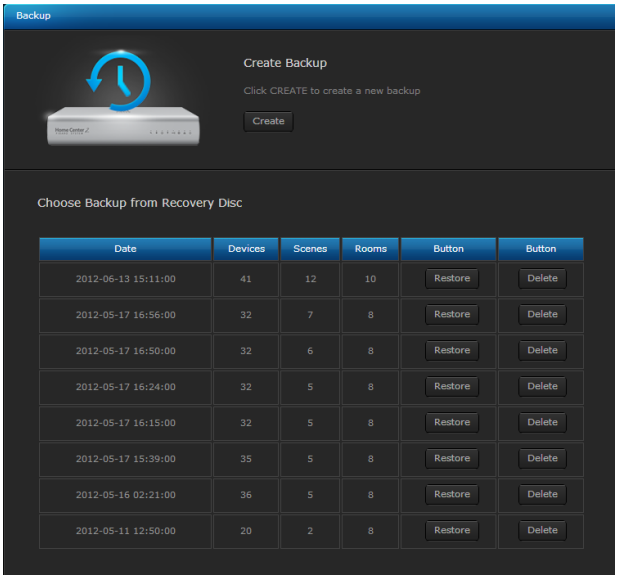

Figure 5.25: Configuration Panel - Backup Creation Window

5.9 Recovery Mode

Recovery Mode is a special panel, designed for retrieving the HC2 operating system in case of technical problems, e.g. when it is not possible to log into the user's panel. Using recovery mode the Home Center 2 will be brought back to the factory installed software version, i.e. 1.009. To access Recovery mode:

1. Turn the Home Center 2 OFF
2. When turning the Home Center 2 ON again, hold Recovery button in the back of HC2 casing - diodes will turn ON sequentially, starting from the left hand side
3. Entering Recovery Mode is signaled with a control diode

   NOTE! if you press and hold the recovery button for too long, the HC2 will set to static IP and network connection will be lost (see 5.8.2)

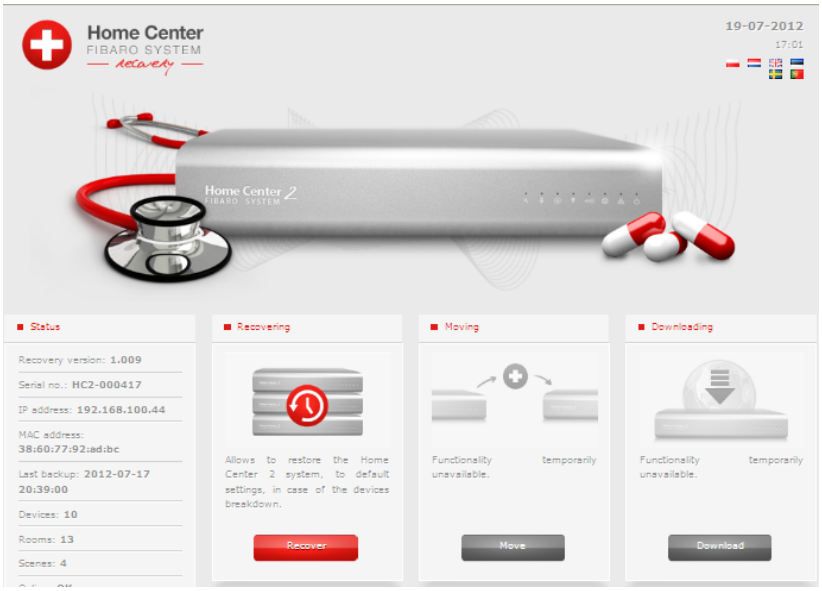

Figure 5.26: Recovery Mode View

The left hand menu displays the following information:

- *Recovery version*
- *HC2 serial no*
- *IP Address* - IP address, visible in local network
- *MAC address* - Module name and software version

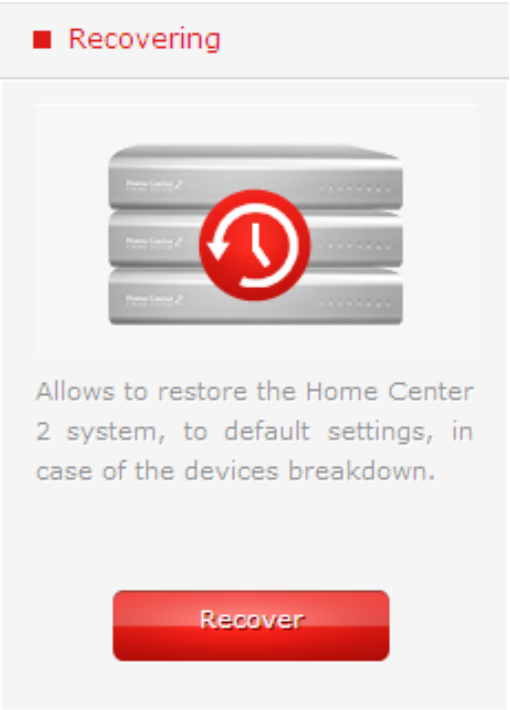

Figure 5.27: Recovery Mode - retrieving from backup

- *Last backup* - The date and time when last backup file was created
- *Devices* - The Number of devices saved in last backup file
- *Rooms* - The Number of rooms saved in last backup
- *Scenes* - The Number of scenes saved in last backup file
- *Online* - The HC2 internet access